

Warnhinweise:

- Lassen Sie Ihr RC-Modell niemals unbeaufsichtigt, solange ein Akku angeschlossen ist. Im Falle eines Defektes, könnte dies Feuer am Modell oder seiner Umgebung verursachen.
- Der Fahrtenregler oder andere elektronische Komponenten dürfen niemals mit Wasser in Berührung kommen. Der Fahrtenregler ist vor Staub, Schmutz, Feuchtigkeit, Vibration und anderen Fremtteilen zu schützen.
- Solange der Motor an den Regler angeschlossen ist, dürfen Sie niemals den Motor mit einem separaten Akku laufen lassen. Dies zerstört den Regler und führt zum Verlust der Garantie.
- Verpolen Sie Ihren Regler nicht. Benutzen Sie verpolisichere Stecksysteme. Vermeiden Sie Kurzschlüsse und blockierende Motoren.
- Alle Kabel und Verbindungen sollen gut isoliert sein. Kurzschlüsse können zur Zerstörung Ihres Reglers führen.
- Nicht für Kinder unter 14 Jahren, kein Spielzeug!
- Die GM-Regler sind ausschließlich für den Einsatz in Batterie- bzw. Akkubetriebenen, ferngesteuerten Modellen vorgesehen, ein anderweitiger Betrieb ist nicht zulässig.
- Motoren, Getriebe, Schiffs- oder Luftschrauben sind gefährliche Gegenstände. Halten Sie sich daher niemals neben oder vor dem Gefährdungsbereich des Antriebes auf!
- Technische Defekte mechanischer oder elektronischer Teile können zum unvorhergesehenen Anlaufen des Motors und herumfliegenden Teilen führen, die erhebliche Verletzungen verursachen können.
- Führen Sie immer zuerst einen Reichweitertest am Boden durch (halten Sie dabei Ihr Modell fest), bevor Ihr Modell zum Einsatz kommt.
- Es dürfen keinerlei Veränderungen am Regler durchgeführt werden, es sei denn, diese sind in der Anleitung beschrieben.
- Haftungsausschluss: Sowohl die Einhaltung der Montage- und Bedienungsanleitung, als auch die Bedingungen und Methoden bei Installation, Betrieb, Verwendung und Wartung des Fahrtenreglers können von der Fa. Graupner nicht überwacht werden. Daher übernimmt die Fa. Graupner keinerlei Haftung für Verluste, Schäden oder Kosten, die sich aus fehlerhafter Verwendung und Betrieb ergeben, oder in irgendeiner Weise damit zusammenhängen.
- Es dürfen nur von uns empfohlene Komponenten und Zubehörteile verwendet werden. Verwenden Sie nur zueinander passende, Original GRAUPNER-Steckverbindungen und Zubehörteile.
- Vergewissern Sie sich vor jeder Inbetriebnahme bevor Sie den Fahrtenregler einstecken, dass: Ihr Sender als einziger auf der Frequenz Ihres Empfängers sendet und Ihr Sender eingeschaltet ist und der Gashebel auf der Position STOP steht.

Operating instructions

Notice d' instructions

29

Gebrauchsanleitung

2

Content

Installing the speed controller	13
Connecting the speed controller	13-14
Matching the controller to the transmitter	14
Reverse function ...R speed controllers	15
Additional functions	16-17
Specification	18
Warnings	18-19
Warranty	30

Congratulations on your choice of a digital speed controller. It is designed by our technical engineer, Ralf Helbing, and continues his series of highly successful speed controllers, which have already been used to win World and European championships, and many national and international titles.

Important:

Please read through these instructions carefully before you use your new speed controller. Only in this way can you exploit its full potential, and avoid errors in operating it.

Description:

The speed controllers are built using only the newest components, with particular emphasis on functionality, durability, and state-of-the-art technology and circuit design. The controllers are equipped with the newest SMD-FETs of extremely high quality. These FETs are exceptionally compact and internal losses are ultra-low. The controller software is subject to constant development by our team, and provides supreme accuracy, especially concerning zero point settings: there can be no mechanical variations of any kind, since everything is stored and controlled digitally. The easy programming system allows you to set up the controller in seconds, with no need for superfluous items such as chips, programmers or similar.

We confident that you will have hours of pleasure and success with your new controller.

Installing the speed controller in the model

Once you have unpacked the controller, please consider the optimum location for it in the model. We recommend that you install it as low in the chassis as possible. Please note that the receiver and receiver aerial should be at least 3 cm from the speed controller, the heavy high-current cables and the battery, and preferably even further away than that. If possible, position the controller in such a way that some air can flow over the FETs, as this increases its general performance potential. When you have decided on a suitable position, fix the controller in place using double-sided foam tape.

Connecting the speed controller

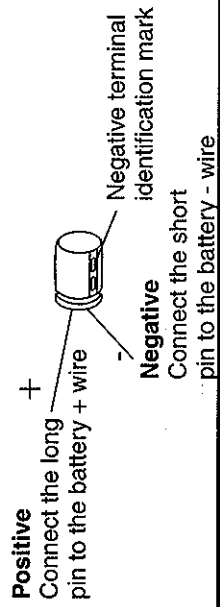
Connecting the battery and motor

- Connect the blue wire to the negative (-) motor terminal
- Connect the yellow wire to the positive (+) motor terminal
- Connect the red wire to the positive (+) battery terminal
- Connect the black wire to the negative (-) battery terminal

Connecting a power capacitor

Order No.: 91539 or 91539.G

This capacitor gives you some advantages. This power capacitor can solve an interference problem under certain conditions. It also protects your speed controller from over voltage peaks and gives you more power. The power capacitor is exactly tailored to the electro-technical specification of our controllers, and this is the only type you should use! You could ruin your controller by using a different type.



Connection to receiver

The speedos are fitted with a JR radio plug. If you use a different radio system you may have to change the order of the wires to coincide with your radio equipment.

- red = receiver positive
- brown = receiver negative
- orange = receiver impulse

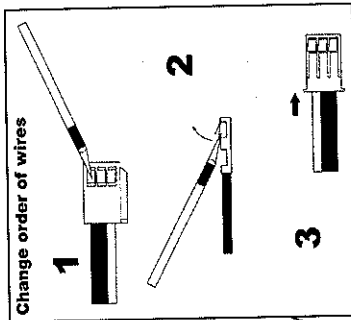
ON/OFF-Switch:

Switching ON:

1. Switch on your radio
2. Connect the speed controller to the battery
3. Switch on the speed controller

Switching OFF:

1. Switch off the speed controller
2. Unconnect the battery
3. Switch off the radio



Radio Adjustment

Connect motor and battery to your speedo as described earlier in this manual. Turn on your transmitter and set all throttle rates to 100%. Turn on your speedo at the switch. Press the set button once. The LED is on. Do not move the throttle on your transmitter. After about 2 seconds the LED turns off (neutral saved). During the next 3 secs give full throttle, full brake and then back to neutral on your transmitter. If you press now the SET-button until the 3 short LED signals occur, all additional functions are reset to factory settings.

The speedo is now tuned to your transmitter.

To check you have tuned it properly, the LED will light at neutral, full speed and full brake. If it does not, repeat the above section.

Factory settings (not Navy V40R):

BRKMIN=0%, BRKMAX=100%, AUTOBRK=0%, REVERSE=100%, time to reverse=98, Powercurve=linear, reverse at motor stop activated

Factory settings Navy V40R:

BRKMIN=0%, BRKMAX=100%, AUTOBRK=0%, REVERSE=50%, time to reverse=4, Powercurve=linear, reverse at motor stop activated

Reverse function ...R speed controller

These speed controllers feature a fully proportional brake and a fully proportional reverse function.

To select reverse you have different possibilities:

1. To switch to reverse function, move your transmitter stick to full brake and next to neutral. Now you can run in reverse with proportional speed control.
2. Reverse at motor stop: Your car must stop and you move the stick to "neutral", now you can run in reverse with proportional speed control. To stop the car move the stick to "full brake", if necessary.
3. After the adjusted time the brake will switch to the reverse function. (Time to reverse: 0 - about 5 seconds)

Possibility 1 can be combined with possibility 2 and/or 3. See programming the additional functions #5 and #6 at the following pages.

Important:

Please note that you must not connect a Schottky diode to the motor if you are using a reversing controller. If you do, the speed controller will be wrecked the moment you switch to reverse.

Additional functions:

Program number of the additional functions:

Program number	Program
#1	BRKMIN
#2	BRKMAX
#3	AUTOBRK
#4	REVERSE
#5	time to reverse
#6	Powercurve, reverse at motor stop act./dea.

#1: Minimum brake **BRKMIN**
This is the percentage of brake that you require for the first stage of brake travel on your transmitter. By setting this value at 20-50% you will immediately notice the braking effect for the smallest movement on your transmitter.

The minimum brake is adjustable between 0% and 100%. (0% factory setting) (useful value: 0-50%)

#2: Maximum brake **BRKMAX**
This is the maximum brake at the full brake transmitter stick position. Reduce this value to stop the wheels from blocking for better car handling.
The maximum brake is adjustable between 0% and 100%. (100% factory setting)
Tip: Most of the drivers use about 80%.

#3: Automatic brake **AUTOBRK**
Automatic brake is the brake you can adjust for the throttle at neutral position of your transmitter. On some tracks it can be useful to brake the car automatically for faster cornering. (0% factory setting).
Most drivers use 0-30%.

#4: Maximum reverse **REVERSE**
Die maximum reverse speed is adjustable between 0-100% without having any influence to the brake. This allows driving like the real model. With model ships (boats) it's useful to reduce the value to about 50% to prevent the ship from diving at reverse.
(100% factory setting, Navy V40R 50% factory setting) (useful values: 30-100%)

#5: Time to reverse
The time delay for the reverse function can be adjusted without any influence to the other reverse functions.
0 = no time delay (mainly used for Trail models together with 100% automatic brake)
1...9 = time delay about 0.5-5s
10 = the reverse function will not be activated by time

#6: Powercurve, reverse at motor stop
With Program 6 the powercurve can be adjusted for the half throttle area.
Linear = linear proportional
Soft = similar to exponential, very good for slippery tracks and Off-Road
Hart = similar to exponential, very good for Stock-Races
Also the function for reverse at motor stop at neutral transmitter stick position can be activated or deactivated.

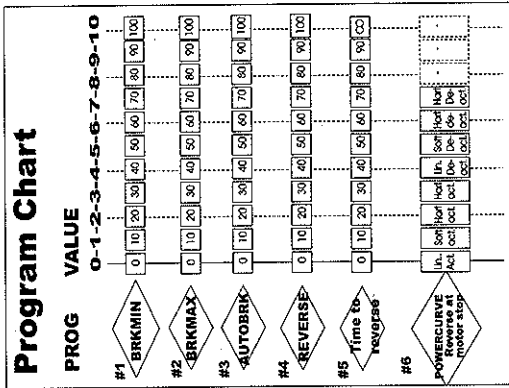
Table of values:

Reverse at motor stop	active	curve	Reverse at motor stop	deactive	curve
0	linear		4	linear	
1	soft		5	soft	
2	hart		6	hart	
3	hart		7	hart	

Programming the special functions with the SET-button

- Speedo off - turn on transmitter
- Press SET button and hold it and switch on the speedo switch during you hold the SET button until the LED is on for 3 short times. Release the button during the 3 short LED signals.
- You have now reached the programming mode.
- Press SET button so often or as long until you have reached your desired program no. (the LED shows each increase of the value)
- About 4sec after pushing the button, the speedo will go to the value mode.

- The speedo confirms that you have entered program mode with 3 short LED signals, and another 3 short LED signals that shows you the start of the value mode, you may begin entering the value
- Now press the SET button as often as long as function is requested (see table) (the LED shows each increase of the value)
- The ESC confirms again after about 4sec not pushing the button with 3 short LED signals and returns to driving mode.
- Ready!



Using FET servos:

Connecting an FET servo:

If you are using an FET servo with a separate power supply, connect the blue FET servo wire to battery positive. In many cases you will also need to use a coil. Please read the notes supplied by the servo manufacturer.

Notes:

- ☞ If the flow of cooling air over the speed controller is insufficient, the integral temperature sensor may switch the unit off; however, you retain full steering control of the vehicle at all times. You can continue running the car as soon as the controller has cooled down again.
- ☞ Ensure that your motor is correctly suppressed using two 100 nF capacitors.
- ☞ Caution: never connect the speed controller with reversed polarity, and never connect a drive battery directly to the motor when the speed controller is also connected to it. Committing either of these errors invalidates the guarantee, so please fit the plugs in such a way that it is impossible to connect your controller with reversed polarity.

Specification:

	Navy V40R	V8RW SX3R	V4R+
Operating voltage:	4,8-16,8V	4,8-12V	4,8-12V
R(DSon) in Ohm at 25°C	2x0,001	2x0,0007	2x0,002
Current max. 10s	120A	60A	60A
Continuous current *	40A/60A watercooled	60A	32A
Min. Turns with GM-motors	>=10T	>=8T	>=15T
BEC voltage/current max 10s	5,5V/3A	5,5V/3A	5,5V/3A

*The continuous current is valid for batteries with max. 3600mAh.

Warnings:

- ☞ Never leave your RC model unsupervised with the battery connected. If a fault should occur, this could cause a fire in the model and threaten anything in the vicinity.
- ☞ Like all electronic components, the speed controller must not be allowed to contact water. Avoid using the unit in rain.
- ☞ When a motor is connected to the controller, you must not connect a separate battery and run the motor. This will wreck the controller and invalidate the guarantee.
- ☞ Do not reverse the polarity of the controller connections.
- ☞ Use only polarised connectors.
- ☞ All cables and connectors must be effectively insulated. Short circuits can ruin your controller.
- ☞ Not suitable for persons under 14 years. This unit is not a toy!
- ☞ The speed controller is designed exclusively for use in battery-operated radio-controlled models. No other usage is permissible.
- ☞ Motors, gears, propellers, RC-models are dangerous objects which require careful handling. For this reason you should avoid standing in the immediate vicinity of the propeller when you connect the battery. Technical faults of mechanical or electrical nature may cause the motor to burst into life unexpectedly and cause other object fly around, which can cause serious injury.*
- ☞ *Limited liability: we at Graupner cannot possibly ensure that you observe our instructions for installing and operating your speed controller; neither can we supervise the conditions and methods of installation, operation, application and maintenance of the unit. For this reason we cannot accept any liability for loss, damage or costs which result from the improper use and operation of these products, or which are connected with them in any way.